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| 10/814,147 | 04/01/2004 | Yung Fu Wu | 2019-0244PSUS1 | 7345 |

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| EXAMINER |
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ABDULSELAM, ABBAS I

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| ART UNIT | PAPER NUMBER |
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2629

| SHORTENED STATUTORY PERIOD OF RESPONSE | NOTIFICATION DATE | DELIVERY MODE |
|--|-------------------|---------------|
| 3 MONTHS | 03/27/2007 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/27/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/814,147

Applicant(s)

WU, YUNG FU

Examiner

Abbas I. Abdulselam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7 and 8 is/are rejected.
- 7) ☒ Claim(s) 6 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 5 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Kajihara (USPN 6697053).

Regarding claim 1, Kajihara teaches an optical mouse, comprising (col. 4, lines 24-25): a housing having an accommodation space formed therein (*col. 1, lines 36-37, col. 1, lines 46-47, Fig. 1 (1, 2), an upper side case (1), a lower side case (2), Fig. 1 shows enough space between the upper side case (1) the lower side case (2)*); a printed circuit board arranged in the accommodation space of the housing (*col. 5, lines 24, Fig. 2 (5), a printed circuit board (50)*); a light source unit having different colors of image light sources, wherein the light source unit is disposed on the printed circuit board (*col. 5, lines 11-16, Fig. 2 (5, 80), Fig. 3 (801, 802, 803), a full color light emitting diode 80 has a red (R) light emitting unit diode 801, a green (G) light emitting unit diode 802, a blue (B) light emitting unit diode 803, with*

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the full color light emitting diode 80 being mounted on the printed circuit board 5); a photodetector unit disposed on the printed circuit board, wherein the photodetector unit is opposite the light sources (col. 2, lines 19-28, Fig. 2 (72, 5), an image sensor (72) is part of an integrated circuit (7) which is mounted on a circuit board (5), and Fig. 2 shows the position of the full color light emitting diode (80) and the image sensor (72)); a light-guiding unit (31) arranged in the accommodation space of the housing, wherein the light-guiding unit is adjacent to the light source unit for guiding a non-complementary color light relative to a reflection surface from one of the image light sources to the reflection surface (col. 3, lines 39-41, Fig. 2 (80, 31), the position of a full color light emitting diode (80) a collimator and a lens (31) shown in Fig. 2, a collimator lens (31) receives light and collimates to output a collimated light, which then irradiates a reflection surface, S; col. 5, lines 11-21, the full color light emitting diode 80 has a red (R) light emitting unit diode 801, a green (G) light emitting unit diode 802, a blue (B) light emitting unit diode 803, and emits a light having one of the three primary colors, i.e., red (R), green (G), and blue (B) when corresponding one of the unit diodes is driven alone, or emits a light having a color produced by mixing those colors when a plurality of unit diodes are driven) and a lens unit (32) arranged in the accommodation space of the housing, wherein the lens unit is positioned below the photodetector unit for converging a reflected light reflected by the reflection surface into the photodetector unit (col. 1,

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lines 66-67, Fig. 2 (3, 32, 73), the position of an optical guide part (32) and the image sensor (72) is shown in Fig. 2, the optical guide part (32) guides the reflected light by the reflection surface, S col. 3, lines 41-44, such that image of the irradiated portion of the reflection surface, S is formed on the image sensor 72 via the optical guide part (32)).

Regarding claim 2, Kajihara teaches the light source unit includes a red LED, a green LED and a blue LED (*col. 5, lines 11-16, Fig. 3 (801, 802, 803), a full color light emitting diode 80 has a red (R) light emitting unit diode 801, a green (G) light emitting unit diode 802, and a blue (B) light emitting unit diode 803).*

Regarding claim 3, Kajihara teaches the light source unit is a LED with at least two different colors of light chips (*col. 4, lines 31-34, full color light emitting diode 80 for emitting a light having mixed color of the primary colors, it is inherent that light emitting diode 80 is manufactured into an electronic chip (LED chips)).*

Regarding claim 5, kajihara teaches the printed circuit board has a light hole, and the lens unit is upwardly extended through the light hole to face the photodetector unit (*col. 2, lines 12-14, an optical guide aperture (51) is formed on a*

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printed circuit board (5) corresponding to the optical guide part (32), and the position of the optical guide part (32) and the image sensor (72) is shown in Fig. 2).

Regarding claim 7, Kajihara teaches the lens unit (32) has a coupling portion for coupling (33) with an end of the light-guiding unit (31) (*col. 1, lines 67, col. 2, lines 1-2, an optical coupling part 33 for coupling the collimator lens 31 and the optical guide part 32*).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over kajihara (USPN 6697053).

Regarding claim 4, Kajihara teaches the printed circuit board has a light hole for allowing reflected light converged by the lens unit to pass therethrough, (*col. 2, lines 12-15, col. 1, lines 66-67, an optical guide part aperture (51) is*

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formed on the printed circuit board (5) correspondingly to the optical guide part (32) which guides the reflected light by the reflection surface, S)

While Kajihara teaches an aperture (51) that corresponds to the optical coupling (31) is formed on a printed circuit board (5) (col. 2, lines 12-15), and as shown in Fig. 2, the aperture (51) is between the light source (80) and image sensor (72)

Kajihara does not specifically teach the position of the light source unit and the photodetector unit are respectively arranged on two opposite sides of the light hole on the printed circuit board.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize an aperture (51) that corresponds to the optical coupling (31) as an alternative to an aperture (51) that that corresponds to the optical guide part (32) for the purpose of passing the light through (col. 2, line 12).

Kajihara teaches the light guiding unit is upwardly extended through the light hole to face the light source unit (*Fig. 1 (31, 51, 80), see the position of an aperture (51) that corresponds to the optical coupling (31) and the light source (80) in Figs 1-2).*

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over kajihara (USPN 6697053) in view of Eriksson et al. (USPN 6424337).

Regarding claim 8, While Kajihara teaches a full color light emitting diode (80), Fig. 3 (801, 802, 803), RGB diodes,

Kajihara does not teach the light source unit having an arcuate shape formed at a front end thereof.

Eriksson et al. on the other hand teach a first, second and third mouse switches 54, 56 and 58, corresponding to a first, second and third arcuate lights 60, 62 and 64, respectively as shown in Fig. 4. Eriksson et al. also teach each mouse switch 54, 56 and 58 preferably has a light 66 so that the mouse switches (54, 56, 58) can be easily located in low lighting conditions (col. 3, lines 52-59).

Clearly as shown in Fig. 4, the first, second and third arcuate lights (60, 62, 64) on the display screen (22) come from their corresponding arcuate switches (54, 56, 58) on a mouse (18), as it is evident from the drawing that the shape of arcuate lights (60, 62, 64) and switches (54, 56, 58) are the same. Furthermore, the switches (54, 56, 58) as shown in Fig. 3 are located on the front end of the mouse (18).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine kajihara's light source (80) of an image sensor mouse shown in Fig. 2 with Eiksson's arcuate shape switches (54, 56, 58) as configured in Fig. 4, because the use of arcuate shape switches (54, 56, 58) helps a control mouse (18) control functions displayed on the display screen 22 as taught by Eriksson (col. 3, lines 37-42).

Allowable Subject Matter

6. Claims 6 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

While, Kajihara *teaches a collimator lens 31, by which it is collimated to output a collimated light, which then irradiates the reflection surface S via the optical coupling part 33, and discloses a light-receiving lens 71 as shown in Fig. 2 (col. 3, lines 39-44)*

Regarding claim 6, Kajihara and Eriksson et al do not teach an optical mouse including a printed circuit board, a photodetector, a lens, a light source having different colors of image light sources, and a light guiding unit for guiding a non-complementary color light relative to a reflection surface from one of the image light sources to a reflection surface such that the light guiding unit has a plurality of light receiving surfaces non-coplanarly connected to one of another and in correspondence with the light sources, respectively.

Regarding claim 9, Kajihara and Eriksson do not teach an optical mouse including a printed circuit board, a photodetector, a lens, a light source having different colors of image light sources, and a light guiding unit for guiding a non-complementary color light

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relative to a reflection surface from one of the image light sources to a reflection surface such that the light-guiding unit has at least one light-receiving surface and a light-exiting surface positioned at an opposite end of the light-receiving surface, and an area of the light-receiving surface of the light-guiding unit is larger than that of the light-exiting surface for enabling light to carry a brightest image formed on the reflection surface.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following arts are cited for further reference.

U.S. Pat. No. 6,819,314 to Black teaches an optical mouse sensor with light-blocking patch filter (col. 2, lines 35-65).

U.S. pat. No. 6,111,563 to Hines teaches a cordless optical mouse with an optical system employing a diffraction grating for separating received optical radiation into a plurality of discrete readily distinguishable color bands (see Fig. 4)

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abbas I. Abdulsalam whose telephone number is 571-272-7685. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abbas I Abdulsalam
Examiner
Art Unit 2629
March 10, 2007

